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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,320	02/19/2004	Andrew C. Goris	100110178-1	6135

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EXAMINER
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AGGARWAL, YOGESH K

ART UNIT	PAPER NUMBER
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2622

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10/18/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/782,320	Applicant(s) GORIS ET AL.	
	Examiner Yogesh K. Aggarwal	Art Unit 2622	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 August 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 7-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-17 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

*Response to Arguments*

1. Applicant's arguments filed 1-5 and 7-17 have been fully considered but they are not persuasive.

**Examiner's response:**

2. Applicant argues regarding claim 8 that Sakata fails to teach field data of the nonstandard target and then to use this field data in adjusting white balance, so it would be quite difficult to calibrate the camera by achieving true white balance under field illumination conditions. The Examiner respectfully disagrees. Sakata et al. teaches adjusting the color balance by mounting the lens cap 11 on the camera lens system 10. As a result the signals Y, R-Y and B-Y that represent the color bar chart 14 on the lens cap 11 are displayed on the viewfinder 51. At the same time, the signals Y', (R-Y)' and (B-Y)' that represent the reference color bar chart 45a are viewed on the top and bottom of the viewfinder as shown in figure 4 (col. 3 lines 25-44, col. 3 lines 60-65). The signals Y, R-Y and B-Y that represent the color bar chart 14 on the lens cap 11 correspond to a field data of the nonstandard calibration target and the reference color bar chart 45a corresponds to standard calibration target. Sakata further teaches that the user compares the color bars 14a and 45a with each other and manipulates the potentiometers so that the color tones of two become equal (col. 3 lines 44-48). Therefore field data of the nonstandard target and the reference color bar chart 45a is used to achieve color (white) balance calibration. It would not be difficult to one skilled in the art to mount a lens cap 11 and then change the potentiometers to achieve a similar color balance. Furthermore the claim never recites that the process of white balance calibration is done automatically.

*Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Smith et al. (US PG-PUB # 20040212685).

[Claim 1]

Smith et al. teaches an imaging device (figure 11) with white balance adjustment, comprising:

image capture circuitry (image sensor 140) configured to produce captured image signals (Paragraph 41);

means for adjusting white balance in the captured image signals under identical illumination conditions for each of a standard calibration target (e.g. white light transmissive element 14a in figure 3, paragraph 23) to provide a first reference metric under the identical illumination conditions and for a nonstandard calibration target (LEDs 18a-18e) to produce a second reference metric under the identical illumination conditions (Paragraphs 34-37, figures 8 and 9, also see paragraphs 38-40)

means for capturing a second group of captured image signals from the nonstandard calibration target under changed illumination conditions. to produce a third reference metric

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(Paragraph 34 states that when the lighting conditions change the calibration technique is done again)

means for adjusting white balance in the second group of captured image signals by relating the third reference metric to the second reference metric (Paragraph 37 teaches that using information from the known ambient conditions, a correction factor is calculated to correct for new lighting conditions)

[Claim 2]

Smith teaches wherein the image capturing circuitry is CMOS or CCD (Paragraph 4).

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 8-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakata et al. (US Patent # 5,119,178).

[Claim 8]

Sakata teaches a method for adjusting white balance in an imaging device, the method comprising the steps of capturing image signals from a field image of a non-standard calibration target (lens cover) and a primary image of a standard calibration target (reference color chart) to produce a captured field image and a captured primary image, relating the captured field image to the captured primary image to provide calibration for adjustment of white balance (col. 3 lines

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25-57, figures 1-4); and adjusting white balance in the captured field image by applying the calibration (col. 3 lines 25-48, figures 1-4).

[Claims 9 and 10]

wherein the step of adjusting white balance comprises enabling an adjusted variable gain coefficient on a variable gain amplifier and the step of enabling an adjusted variable gain coefficient comprises calculating a relationship between a variable gain coefficient for the field image and a variable gain coefficient for the primary image (col. 3 lines 25-49 teach an algorithm for varying the gain of the amplifiers 36 and 37 for equalizing the colors of the reference color chart to the color chart on the lens cap in order to adjust the white balance).

[Claim 11]

Sakata teaches wherein the step of calculating includes determining at least one variable gain coefficient for the primary image (col. 3 lines 25-32), changing the variable gain coefficient for the primary image to produce an adjusted variable gain coefficient (col. 3 lines 44-49), and supplying the adjusted variable gain coefficient to the means for adjusting white balance (col. 3 lines 50-57 teach that after the gains of the variable gain amplifier is adjusted the lens cap is removed by the user, the image on the viewfinder is viewed by the user. It is noted that this image would inherently have the white balance that is adjusted in the step taught in col. 3 lines 25-49). By varying the gains of the amplifiers to make the reference color chart equal to the field image of the lens cap color chart, the determination of gains in the primary and field image has to be determined. Therefore gains for both primary image and field are determined and based on that the gains of the amplifiers are varied to make the reference color chart equal to the field image of the lens cap color chart.

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[Claim 12]

Sakata teaches wherein the non-standard calibration target is a camera lens cap 11 (col. 3 lines 58-65, figures 1-4).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (US PG-PUB # 20040212685) in view of Sakata et al. (US Patent # 5,119,178).

[Claim 3]

Smith fails to teach wherein the means for adjusting white balance include signal processing circuitry capable of changing variable gain coefficients. However Sakata teaches wherein the means for adjusting white balance include signal processing circuitry capable of changing variable gain coefficients (col. 3 lines 44-48). Therefore taking the combined teachings of Smith and Sakata, it would be obvious to one skilled in the art at the time of the invention to have been motivated to have used signal processing circuitry capable of changing variable gain coefficients in order to have a user-friendly process that easily changes the color balance.

[Claim 4]

Sakata teaches wherein the means for adapting the means for adjusting comprises an algorithm for relating a field image of a non-standard target to a primary image of a standard target (col. 3 lines 25-49 teach an algorithm for varying the gain of the amplifiers 36 and 37 for equalizing the

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colors of the reference color chart to the color chart on the lens cap in order to adjust the white balance).

[Claim 5]

Sakata teaches wherein the algorithm is operable for determining at least one variable gain coefficient for the primary image (col. 3 lines 25-32), changing the variable gain coefficient for the primary image to produce an adjusted variable gain coefficient (col. 3 lines 44-49), and supplying the adjusted variable gain coefficient to the means for adjusting white balance (col. 3 lines 50-57 teach that after the gains of the variable gain amplifier is adjusted the lens cap is removed by the user, the image on the viewfinder is viewed by the user. It is noted that this image would inherently have the white balance that is adjusted in the step taught in col. 3 lines 25-49). By varying the gains of the amplifiers to make the reference color chart equal to the field image of the lens cap color chart, the determination of gains in the primary and field image has to be determined. Therefore gains for both primary image and field are determined and based on that the gains of the amplifiers are varied to make the reference color chart equal to the field image of the lens cap color chart.

9. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (US PG-PUB # 20040165065) in view of Takeuchi (US PG-PUB # 20030112342).

[Claim 13]

Smith teaches image capture circuitry (140) configured to produce captured image signals (figure 11);

a primary image of a standard target useful for calibrating white balance adjustment (e.g. white light transmissive element 14a in figure 3, paragraph 23) and a secondary image of a non-



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standard target useful for calibrating white balance adjustment (LEDs 18a –18e, Paragraphs 34-37, figures 8 and 9, also see paragraphs 38-40); and

field capture image of the nonstandard calibration data (Paragraph 34 states that when the lighting conditions change the calibration technique is done again that comprises the nonstandard LEDs again),

white balance processing circuitry that adjusts white balance by relating the representation of the primary image to the representation of the secondary image (Paragraph 37 teaches that using information from the known ambient conditions, a correction factor is calculated to correct for new lighting conditions).

Sakata fails to teach storing primary and secondary images. However Takeuchi teaches a digital camera that stores the primary image d206 and reference image data d220 into the memories 250 and 270 (Paragraphs 86-90, figure 1).

Therefore taking the combined teachings of Sakata and Takeuchi, it would be obvious to one skilled in the art at the time of the invention to have been motivated to have stored primary and secondary images as taught in Takeuchi to be used in the system of Sakata in order to reduce the calculation burden on a reproduction device such as a PC that is connected to the camera (Paragraphs 104-105).

[Claim 14]

Smith teaches wherein the image capturing circuitry is CMOS or CCD (Paragraph 4).

10. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (US PG-PUB # 20040165065), Takeuchi (US PG-PUB # 20030112342) and in further view of Sakata et al. (US Patent # 5,119,178).

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## [Claim 15]

Smith fails to teach wherein the means for adjusting white balance include signal processing circuitry capable of changing variable gain coefficients. However Sakata teaches wherein the means for adjusting white balance include signal processing circuitry capable of changing variable gain coefficients (col. 3 lines 44-48). Therefore taking the combined teachings of Smith and Sakata, it would be obvious to one skilled in the art at the time of the invention to have been motivated to have used signal processing circuitry capable of changing variable gain coefficients in order to have a user-friendly process that easily the changes the color balance.

## [Claim 16]

Smith in view of Takeuchi fail to teach wherein the white balance processing circuitry is operable for determining at least one variable gain coefficient for a field image, determining at least one variable gain coefficient for the primary image, relating the variable gain coefficient for the field image to the variable gain coefficient for the primary image to produce an adjusted variable gain coefficient, and supplying the adjusted variable gain coefficient to the means for adjusting white balance.

However Sakata teaches wherein the white balance circuitry is operable for determining at least one variable gain coefficient for the primary image (col. 3 lines 25-32), changing the variable gain coefficient for the primary image to produce an adjusted variable gain coefficient (col. 3 lines 44-49), and supplying the adjusted variable gain coefficient to the means for adjusting white balance (col. 3 lines 50-57 teach that after the gains of the variable gain amplifier is adjusted the lens cap is removed by the user, the image on the viewfinder is viewed by the user. It is noted that this image would inherently have the white balance that is adjusted in the

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step taught in col. 3 lines 25-49). By varying the gains of the amplifiers to make the reference color chart equal to the field image of the lens cap color chart, the determination of gains in the primary and field image has to be determined. Therefore gains for both primary image and field are determined and based on that the gains of the amplifiers are varied to make the reference color chart equal to the field image of the lens cap color chart.

Therefore taking the combined teachings of Smith, Takeuchi and Sakata, it would be obvious to one skilled in the art at the time of the invention to have been motivated to have the white balance processing circuitry is operable for determining at least one variable gain coefficient for a field image, determining at least one variable gain coefficient for the primary image, relating the variable gain coefficient for the field image to the variable gain coefficient for the primary image to produce an adjusted variable gain coefficient, and supplying the adjusted variable gain coefficient to the means for adjusting white balance in order to have a user-friendly process that easily the changes the color balance thereby calibrating the imaging device quickly.

[Claim 17]

Smith teaches wherein the white balance processing circuitry implements an empirical algorithm that relates a primary image obtained from a standard calibration target to a field image obtained from a non-standard calibration target (Paragraph 39).

***Allowable Subject Matter***

11. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh K. Aggarwal whose telephone number is (571) 272-7360. The examiner can normally be reached on M-F 9:00AM-5:30PM.

13. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571)-272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

YKA  
October 13, 2007



LIN YE  
SUPERVISORY PATENT EXAMINER